Condensed Title:

A resolution of the Mayor and City Commission of the City of Miami Beach, Florida, approving a roadway configuration for 16th Street from Alton Road to Lenox Court that consists of no parking on the north side, parking on the south side, two travel lanes, a left turn lane, and bike lanes, which was presented at the Neighborhoods/Community Affairs Committee on January 21, 2009.

Key Intended Outcome Supported:

Improve or maintain traffic flow.

Supporting Data (Surveys, Environmental Scan, etc.): Transportation remains one of the most significant areas to address from the survey results (often mentioned as a key quality of life issue). 24% of residents rated traffic flow excellent or good, and 37% as poor. 35% of residents rated the availability of pedestrian trails and bicycle paths/lanes as excellent or good, and 30% as poor.

Issue:

Shall the City Commission adopt the Resolution?

Item Summary/Recommendation:

In September 2007, the Public Works Department striped and signed bike lanes on 16th Street between Bay Road and Washington Avenue. This required the removal of a left turn lane on 16th Street approaching Alton Road westbound. After the implementation of the bike lanes, residents complained to elected officials and City staff that the elimination of the left turn lane resulted in a significant back-up of vehicles. City staff was directed by the Office of the Mayor and Commissioners to address this issue. The City retained the services of PBS&J to perform a qualitative analysis of the operational conditions of the existing intersection with bike lanes and the results of the study concluded that a queue on the westbound direction was caused by left turn vehicles blocking the westbound through movement. An option to improve this condition would be to introduce a left turn lane on 16th Street at Alton Road; however doing so would require either the elimination of the bike lane or elimination of the on-street parking on the north side of 16th Street between Alton Road and Lenox Court. At the November 24, 2008 Neighborhoods/Community Affairs Committee meeting, a motion was made to remove the five (5) existing parking spaces on the north side of 16th Street from Alton Road to Lenox Court to allow sufficient space for both the bike lane and a dedicated left turn lane. A relatively high number of bicyclists utilize 16th Street, since it provides directness and connectivity to bicycle traffic generators. The existing bike lanes provide a safer environment for these bicyclists, since the bike lanes minimize potential conflicts between them and motorized vehicles either parallel parked on 16th Street or traveling through the intersection of 16th Street at Alton. City staff met with Miami-Dade County on December 15, 2008 to discuss the intersection and the proposed roadway configuration received preliminary approval. At the January 21, 2009 Neighborhoods/ Community Affairs Committee meeting, a motion was made to approve a proposed cross-section of no on-street parking on the north side, on-street parking on the south side, two travel lanes, a left turn lane, and bike lanes.

ACCEPT THE CITY MANAGER'S RECOMMENDATION.

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N/A

Financial Information:

Source of Funds:		Amount	Account
runus:	1		
	2		
	3		Nederland
OBPI	Total		

Financial Impact Summary:

City Clerk's Office Legislative Tracking:

Fernando Vazquez, P.E., ext. 6399

Sign-Offs:

Department Director	Assistant City Manager	(City Manager							
RCM	RCM	JMG	X							
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AGENDA ITEM R7H
DATE 2-25-09



City of Miami Beach, 1700 Convention Center Drive, Miami Beach, Florida 33139, www.miamibeachfl.gov

COMMISSION MEMORANDUM

TO:

Mayor Matti Herrera Bower and Members of the City Commission

FROM:

City Manager Jorge M. Gonzalez

DATE:

February 25, 2009

SUBJECT: A RESOLUTION OF THE MAYOR AND CITY COMMISSION OF THE CITY OF MIAMI BEACH, FLORIDA, APPROVING A ROADWAY CONFIGURATION FOR 16TH STREET FROM ALTON ROAD TO LENOX COURT THAT CONSISTS OF NO PARKING ON THE NORTH SIDE, PARKING ON THE SOUTH SIDE, TWO TRAVEL LANES, A LEFT TURN LANE, AND BIKE LANES, WHICH BEST SUPPORTS THE GOALS ESTABLISHED IN THE APPROVED 16TH STREET OPERATIONAL IMPROVEMENT AND ENHANCEMENT PROJECT BASIS OF DESIGN REPORT AND WHICH WAS PRESENTED AT THE NEIGHBORHOODS/COMMUNITY AFFAIRS COMMITTEE ON **JANUARY 21, 2009.**

ADMINISTRATION RECOMMENDATION

Adopt the Resolution.

BACKGROUND

A Basis of Design Report (BODR) was prepared for the 16th Street Operational Improvements and Enhancement project and subsequently reviewed and approved by the Commission on September 5, 2007. After existing base data for the project area was collected and analyzed, one of the goals identified in the conceptual design to minimize speeds along the corridor was traffic calming. It was indicated that traffic calming was a major missing element along the entire corridor as well as a primary recommendation for a pedestrian-friendly environment along 16th Street. The actual condition of the corridor, undivided with a wide right-of-way, was noted to encourage increased travel speeds. The wide roadway width meant that pedestrians were exposed to significant crossing distances. Sight distance was deficient and parked vehicles and signs obstructed pedestrian's views. Design recommendations included narrower lanes to reduce drive speeds, bulb outs at intersections to announce pedestrian crossings (and reduce pedestrian crossing distances) and special pavement crosswalks and parking lanes to designate these as special areas.

As part of the approved BODR some of the site design recommendations to create a more pedestrian-friendly environment included a street cross section consisting of a two 10-foot travel lanes, two 5-foot bike lanes, two 8-foot on-street parking lanes, two 12-foot sidewalks in the commercial zone between, Collins Avenue and Washington Avenue and between Alton Road and Lenox Avenue and 6- to 8-foot, variable-width sidewalks in the residential zone, between Lenox Avenue and Washington Avenue, with the planting areas next to private properties varying in width. See proposed cross-section identified in the BODR (Attachment 1, Proposed BODR Crosssections for 16th Street).

The development of the BODR included an intensive public involvement process with substantial public input. The following chart summarizes the underlined preferences of various stakeholders:

	Decorative Stamped Asphalt	Bicycle Lanes	Wider Sidewalks	Enhanced Landscaping	Parking	Removal of Encroachments
Historical Preservation Board			•	•	•	•
Internal Visioning Session		D		•	•	
Community Workshop		•		•		
Transportation and Parking Committee		D	•	•		
Planning Board	•	D	•	•		•
Flamingo Neighborhood Association			•	•		
Finance and Citywide Projects Committee		•	•			•

As noted in this chart, almost every stakeholder group preferred bike lanes.

In September 2007, the Public Works Department striped and signed bike lanes on 16th Street between Bay Road and Washington Avenue. This required the removal of a left turn lane on 16th Street approaching Alton Road westbound. After the implementation of the bike lanes, some residents complained to elected officials and City staff that the elimination of the left turn lane resulted in a significant back-up of vehicles. City staff was directed by the Office of the Mayor and Commissioners to evaluate this issue further and determine the viability of these complaints.

ANALYSIS

Pursuant to these complaints, the City retained the services of PBS&J to perform a qualitative analysis of the operational conditions of the existing intersection with bike lanes during the morning (7:00 a.m. to 9:00 a.m.) and afternoon (4:00 p.m. to 6:00 p.m.) peak hours in order to be able to provide an assessment of the existing roadway configuration (see Attachment 2, PBSJ Study). The results of the study provided the following conclusions based on field observations:

- The right turning vehicles on both directions used the bike lane to turn, forcing bicyclists to use the sidewalk.
- The stacking on the westbound direction was caused by left turn vehicles blocking the westbound through movement while they wait for an adequate gap from opposing traffic that crosses the intersection.

The study concluded that the current condition shows stacking for the westbound movement at the intersection. An option to improve this condition would be to introduce a left turn lane on 16th Street at Alton Road. Given the current street width, to introduce a dedicated left turn lane would require the removal of the 16th Street bike lanes from Lenox Avenue up to the intersection at Alton Road or the elimination of on-street parking in the same area.

An adverse effect to removing the bike lanes would be that the continuity of bike lanes would be truncated at Lenox Avenue and therefore would introduce a safety issue to bicyclists trying to reach Alton Road as it would force the bicyclists to use the sidewalk or to have to share the street with motorized vehicles crossing 16th Street at this intersection.

A relatively high number of bicyclists utilize 16th Street, since it provides directness and connectivity between major street collectors such as Alton Road to points of destination such as Washington Avenue and the beach as well as other points of interest in South Beach. The existing bike lanes provide a safer environment for these bicyclists, since the bike lanes minimize potential conflicts between them and motorized vehicles either parallel parked on 16th Street or traveling through the intersection of 16th Street at Alton.

To evidence this, bicycle counts were conducted at the intersection of 16th Street and Alton Road before and after the bike lanes were striped along 16th Street. Miami-Dade County conducted bicycle counts in February 2007. There were a total of 20 bicyclists counted on a weekday between the hours of 7-9am, and a total of 31 bicyclists on a Saturday between the hours of 12-2pm. The City of Miami Beach Public Works Department conducted bicycle counts after the bike lanes were striped in May 2008 during the same days and hours. The number of bicyclists increased on the weekday from 20 to 28 bicyclists, and on Saturday they increased from 31 to 121. This dramatic increase demonstrates how well the bike lanes are being utilized by the community, particularly during weekend hours for both transportation and recreational use. Table 1 below summarizes the before and after bicycle counts at 16th Street and Alton Road.

Table 1. Bicycle Counts at 16th Street and Alton Road

BEFORE		AFTER		
February 2007		May 200	% Change	
Weekday	20	Weekday	28	40%
Saturday	31	Saturday	121	290%

The City conducted additional bicycle counts in November 2008 for all turning movements along both Alton Road and 16th Street between the hours of 4-6pm. According to these counts, there were a total of 91 bicyclists traveling eastbound/westbound along 16th Street and a total of 105 bicyclists traveling northbound/southbound along Alton Road (see Attachment 3, 16th St. and Alton Rd. Bicycle Counts).

NEIGHBORHOODS/COMMUNITY AFFAIRS COMMITTEE

At the November 24, 2008 Neighborhoods and Community Affairs Committee meeting, a motion was made to remove the five (5) existing parking spaces on the north side of 16th Street from Alton Road to Lenox Court. The Committee deemed that the available right of way can only support two out of three possible uses and that the turn lane and bike lane were higher priority than the parking spaces. This option would allow sufficient space for both the bike lane and a dedicated left turn lane. At the December 10, 2008 City Commission Meeting, the City Commission referred this item to the next Neighborhoods and Community Affairs Committee meeting for additional discussion.

Subsequent to the December 10th City Commission meeting, City staff met with Miami-Dade County on December 15, 2008 to discuss the intersection and the proposed roadway configuration received preliminary approval. At the January 21, 2009 Neighborhoods and Community Affairs Committee meeting, a motion was made to approve the proposed cross-section (see Attachment 4, Proposed Cross-section for 16th Street and Alton Road). While the removal of parking spaces is generally of concern anywhere in the City, the intersection configuration recommended by city and county staff addresses a good solution for both bicycle use and safety and for vehicle movements. As such, the trade off of parking spaces in this instance is justified.

CONCLUSION:

The Administration recommends that the Mayor and City Commission adopt and approve a

roadway configuration for 16th Street from Alton Road to Lenox Court that consists of no on-street parking on the north side, on-street parking on the south side, two travel lanes, a left turn lane, and bike lanes. This street cross section best supports the approved BODR for the 16th Street Operational Improvement and Enhancement project goals to improve the safety of the corridor for bicyclists and pedestrians and to enhance the quality of life for local residents and visitors.

Attachments:

- 1. Proposed BODR Cross-sections for 16th Street
- 2. PBSJ Study
- 3. 16th St. and Alton Rd. Bicycle Counts
- 4. Proposed Cross-section for 16th Street and Alton Road

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F	RES	OL	UT	ION	ľ	O		

A RESOLUTION OF THE MAYOR AND CITY COMMISSION OF THE CITY OF MIAMI BEACH, FLORIDA, APPROVING A ROADWAY CONFIGURATION FOR 16TH STREET FROM ALTON ROAD TO LENOX COURT THAT CONSISTS OF NO PARKING ON THE NORTH SIDE, PARKING ON THE SOUTH SIDE, TWO TRAVEL LANES, A LEFT TURN LANE, AND BIKE LANES, WHICH BEST SUPPORTS THE GOALS ESTABLISHED IN THE APPROVED 16TH STREET OPERATIONAL IMPROVEMENT AND ENHANCEMENT PROJECT BASIS OF DESIGN REPORT AND WHICH WAS PRESENTED AT THE NEIGHBORHOODS/COMMUNITY AFFAIRS COMMITTEE ON JANUARY 21, 2009.

WHEREAS, a Basis of Design Report (BODR) was prepared for the 16th Street Operational Improvements and Enhancement project and subsequently reviewed and approved by the Commission on September 5, 2007; and

WHEREAS, as part of the approved BODR some of the site design recommendations to create a more pedestrian-friendly environment included a street cross section consisting of a two 10-foot travel lanes, two 5-foot bike lanes, two 8-foot on-street parking lanes, two 12-foot sidewalks in the commercial zone and 6- to 8-foot, variable-width sidewalks in the residential zone, with the planting areas next to private properties varying in width; and

WHEREAS, the development of the BODR included an intensive public involvement process with substantial public input and almost every stakeholder group preferred bike lanes; and

WHEREAS, in September 2007, the Public Works Department striped and signed bike lanes on 16th Street between Bay Road and Washington Avenue and this required the removal of a left turn lane on 16th Street approaching Alton Road westbound; and

WHEREAS, after the implementation of the bike lanes, residents complained to elected officials and City staff that the elimination of the left turn lane resulted in a significant back-up of vehicles, and City staff was directed by the Office of the Mayor and Commissioners to address this issue; and

WHEREAS, the City retained the services of PBS&J to perform a qualitative analysis of the operational conditions of the existing intersection with bike lanes and the results of the study concluded that a queue on the westbound direction was caused by left turn vehicles blocking the westbound through movement; and

WHEREAS, an option to improve this condition would be to introduce a left turn lane on 16th Street at Alton Road; however doing so would require either the elimination of the bike lane or elimination of the on-street parking on the north side of 16th Street between Alton Road and Lenox Court; and

WHEREAS, at the November 24, 2008 Neighborhoods/Community Affairs Committee meeting, a motion was made to remove the five (5) existing parking spaces on the north side of 16th Street from Alton Road to Lenox Court to allow sufficient space for

both the bike lane and a dedicated left turn lane and at the January 21, 2009 Neighborhoods/ Community Affairs Committee meeting, a motion was made to approve a proposed cross-section of no parking on the north side, parking on the south side, two travel lanes, a left turn lane, and bike lanes; and

WHEREAS, a relatively high number of bicyclists utilize 16th Street, since it provides directness and connectivity to bicycle traffic generators, and the existing bike lanes provide a safer environment for these bicyclists, since the bike lanes minimize potential conflicts between them and motorized vehicles either parallel parked on 16th Street or traveling through the intersection of 16th Street at Alton; and

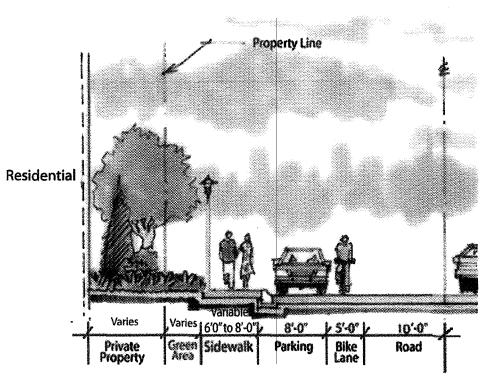
WHEREAS, the City Administration would recommend that the Mayor and City Commission approve a roadway configuration for 16th Street from Alton Road to Lenox Court that consists of no parking on the north side, parking on the south side, two travel lanes, a left turn lane, and bike lanes, which best supports the approved BODR for the 16th Street Operational Improvement and Enhancement project goals and which was presented at the Neighborhoods/Community Affairs Committee on January 21, 2009.

NOW, THEREFORE, BE IT DULY RESOLVED BY THE MAYOR AND THE CITY COMMISSION OF THE CITY OF MIAMI BEACH, FLORIDA, that the Mayor and City Commission hereby approve a roadway configuration for 16th Street from Alton Road to Lenox Court that consists of no parking on the north side, parking on the south side, two travel lanes, a left turn lane, and bike lanes, which best supports the goals established in the approved 16th Street Operational Improvements and Enhancement Project Basis of Design Report and which was presented at the Neighborhoods/Community Affairs Committee on January 21, 2009.

	PASSED and ADOPTED this	day of	, 2009.	
ATTEST:				
			MAYOR	
CITY CLE	RK			

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APPROVED AS TO FORM & LANGUAGE & FOR EXECUTION



16th Street Commercial Zone

16th Street Residential Zone

Figure 2-4
Revised Concept Plan Typical Section
16th Street Phase I - Basis of Design Report
City of Miami Beach, Florida



Attachment 2



MEMORANDUM

To: Xavier Falconi, P.E., Transportation Manager, City of Miami Beach

From: Sanhita Lahiri, P.E., PTOE

Cc: Rafiq Alqasem, P.E., PTOE

Christine Leduc, Transportation Coordinator, City of Miami Beach

Date: June 26, 2008

Intersection of 16th Street and Alton Road – Left turn storage lanes on the East

and Westbound direction.

PBS&J has performed a field review of the intersection of 16th Street and Alton Road, and have also reviewed the BODR SYNCHRO model of this intersection, provided by the City. Following are the summary and recommendations:

- It was identified in the meeting with the City of Miami Beach and PBS&J on May 6, 2008 that the methodology to be adopted for the study would be
 - (a) Modify the 2007 PM peak BODR SYNCHRO model (obtained from the City) for the intersection 16th Street and Alton Road, to test a split phase operation for the Eastbound and Westbound movements. It was agreed that no other parameters in the model would be changed so that the delay before and after may be compared.
 - (b) Depending on the delay comparison, a further course of action will be decided, including the possibility of full traffic impact study.
- Review of the 2007 PM peak BODR SYNCHRO model showed that the intersection was evaluated with an Eastbound left turn storage lane of 80ft and a Westbound left turn storage lane of 110ft. The existing operating conditions are however much more constrained with no left turn storage lanes on the eastbound and westbound direction. The model was modified and the left turn lanes were eliminated and split phase introduced. Table 1 below shows that removing the left turn storage lane, cause significantly more delay to both the approaches and introduction of split phase on the Eastbound and Westbound direction further exacerbate the condition.

Table 1 – Summary of Approach Delays Obtained from SYNCHRO Model for 16th Street and Alton Road

Street and Anon Road											
		BODR MODEL HDELAY (s)	2007 PM PEAK MODEL WITH SPLI PHASE FOR EASTBOUND AND WESTBOUND MOVEMENTS APPROACH DELAY (s)								
Approach	Obtained from	Modified by	Modified by	Modified by							
11pproduct	City of Miami	PBS&J-	PBS&J	PBS&J-							
	Beach - Including	Excluding	Including	Excluding							
ĺ	Eastbound and	Eastbound and	Eastbound and	Eastbound and							
	Westbound Left	Westbound Left	Westbound Left	Westbound Left							
	turn Storage lanes	turn Storage lanes	turn Storage lanes	turn Storage lanes							
Eastbound	46.7	195.8	74.2	362.5							
Westbound	33.4	34.1	66.0	84.5							

• The BODR reports the PM peak hour to be between 5:00PM and 6:00PM, and field review was done on May 20, 2008 to observe and assess the existing conditions including geometric and operational during the above mentioned time period.

It was observed that the existing Eastbound and Westbound vehicular movement at the intersection of 16th Street and Alton Road has a shared operation with only 1 lane sharing the Left, Through and Right turn movements. The roadway at this location also has bike lanes on both sides of the roadways.

The signal operation shows the Eastbound and Westbound left turn movements operating on a permissive phase. Queues on both directions were observed and sample counts were taken for 15 consecutive signal cycles (130sec per cycle). The field observation clearly shows no left over queues on the Eastbound direction and up to 14 cars on the Westbound direction. This does not match with the queues observed in the 2007 PM peak BODR SYNCHRO model (the model shows total 463veh on the Eastbound and 122veh on the Westbound direction). Table 2 below shows the left over queue data collected in the field.

Table 2 – Sample Queue Counts Observed on May 20, 2008 at the intersection of 16th Street and Alton Road

Sample Queue Counts	Sample Queue Counts Left Over Queue from Previous Cycle (veh)										
Signal Cycle	Eastbound	Westbound									
1st Cycle	0	7									
2nd Cycle	0	0									
3rd Cycle	0	0									
4th Cycle	0	0									
5th Cycle	0	0									
6th Cycle	0	. 1									
7th Cycle	0	7									
8th Cycle	. 0	4									
9th Cycle	0	9									
10th Cycle	0	14									
11th Cycle	0	9									
12th Cycle	00	0									
13th Cycle	0	0									
14th Cycle	0 .	3									
15th Cycle	0	4									



It was also observed that the right turning vehicles on both the directions used the bike lanes to turn, forcing bikers to use the sidewalk, a significant number of bikers were observed to this in the time period observed.

The queue on the westbound direction was observed to be caused by the left turn vehicles blocking the westbound through movement. As mentioned earlier the left turn movement operates on a permissive phase and has to wait for adequate gap from opposing traffic to cross the intersection.

• The qualitative field assessment shows that westbound movement has queues, which spill back to the intersection on the east of Alton Road. This condition could be improved by introducing a left turn lane. The physical geometry of the roadway at this point of time does not offer any other option than removing the bike lane and installing a left turn lane. However it may be noted that the removal of a bike lane from a particular section of roadway with continuous bike lanes, may not be safe as it would force the bikers on the sidewalk in that section.



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Lane Configurations	ኣ	^		ኣ	}	THE PERSON NAMED IN	ነ ና	† }		×	ተተ	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1.900	1900	1900	1900
Lane Width (ft)	10	16	12	10	16	12	10	12	12	10	12	10
Storage Length (ft)			0	110		1 1 0	120		0.	140		75
Storage Lanes	1	in it is the interest	0	1	Special Commission of the Comm	0	1	E	0	1		7 1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50	· · · · · · · · · · · · · · · · · · ·	50	50	50
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15	عُلِيَةً فَعَدَ حِنْهُمُ حَسَمَتُ	9
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt · · ·	illocation de la constanta	0.912	anno montrollation		0.955	Anthon Tolland		0.992		January Commen		0.850
Flt Protected	0.950	100	777 B.B.D.	0.950		77	0.950			0.950	- 7455	
Satd. Flow (prot)	1652	1637	0	1652	1714	0	1652	3511	0.	1652	3274	1478
Flt Permitted	0.652			0.402			0.274			0.199		
Satd. Flow (perm)	1134	1637	0	699	1714	Ō	476	3511	0	346	3274	1478
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Link Distance (ft)		407			196			276			591	
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Volume (vph)	215	102	146	22	70	30	101	886	48	159	895	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)	ebet 1 fort	10%	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		10		41.7.16.00		Fillians.	8.946	10:	7-11. Seden 8. 1595
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Lane Group Flow (vph)		270	**************************************	% 24∜	109			1015	0 1		973	53
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Minimum Initial (s)	27.0	27.0		27.0	27.0		30.0	30.0		5.0	30.0	30.0
Minimum Split (s)	38.0	38.0		38:0	38.0		79.0	79.0		8.0	79.0	¥79!0
Total Split (s)	42.0	42.0	0.0	42.0	42.0	0.0	79.0	79.0	0.0	9.0	88.0	88.0
Total Split (%)	32.3%	32.3%	0.0%	32.3%	32.3%	0.0% €	0.8%	30.8%	0:0%	6.9%	67.7%	37.7%
Maximum Green (s)	37.0	37.0		37.0	37.0	· ~ ;************************************	74.0	74.0	edisionaleta korresponii e de	6.0	83.0	83.0
Yellow Time (s)	4.0	4.0		4.0	4:0		4.0	4.0		3.0	4.0	4.0
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Walk Time (s)	7.0-	7.0		7.0			56.0	56.0			56.0	56.0
Flash Dont Walk (s)	26.0	26.0		26.0	26.0	شدقة دراحه دوارته ويترزجونه	18.0	18.0	سلمشنه إليدمنه ومساقاته أواسيد		18.0	18.0
Pedestrian Calls (#/hr)	-, 0	- 0,	. \$ \$ 156 a	0.				0	Hawkii		.0	- 0
Act Effct Green (s)	32.7	32.7	teri	32.7	32.7	- Acores	78.5	78.5	- Carata de Caraca de Cara	89.2	89.2	89.2
Actuated g/O Ratio		0.25		0.25	0.25	深深等	0,60	0.60		-0.69	0.69	0.69
v/c Ratio	0.82	0.59		0.14	0.24		0.38	0.48	المناه فلسناك مستستند	0.57	0.43	0.05
Uniform Delay, d1		33.3		37.6	32.4	3.75	13.3	14.3		7.1	9.1	2.6
Control Delay	57.8	36.7	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	37.3	32.5		19.2	15.6	* s. diapted to 4-stricket e. Marris	16.6	10.3	4.1
			erenium energy en		4							

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Obtained from City of Miami Beach

	<i>*</i>		•		4	1	*	†	<i>*</i>	4	Ţ	- 4
Lane Group		EBT		WBL	Weir	WBR	NBL	Ten	NBR.	Sel.	SET.	SER
Queue Delay	0.0	0:4		0.0	0.0		0.0	0.0		0.1	0.0	0.0
Total Delay	57.8	37.1		37.3	32.5		19.2	15.7		16.7	10.3	4.1
LOS	L.E.	· #D·		D.	;;; ⊮C ;;	1 600	В	∵∄B	1.54.7	∵B	₽₽	A
Approach Delay		46.7			33.4			16.0			11.0	
Approach L@S		Ģ " D ∜	1		· C		· · · · · · · · · · · · · · · · · · ·	. B	130. (H) (N	1数温度	B	
Intersection Summany											NA ALA	feet it
Area Type: Oi	her -											4
Cycle Length: 130	****************									· · · · · · · · · · · · · · · · · · ·		
Actuated Cycle Length: 1					海蝇酶				reggi			
Offset: 51 (39%), Referen	nced to	phase 2	:NBTL	and 6:S	BTL, St	art of G	reen					
Natural Cycle: 125	43	化學時間	建筑 流。	1 性腺	$p_{\mu_{\mu_{\mu}}}$	地理社会			t vitality.			
Control Type: Actuated-C							***************************************					
Maximum v/c Ratio: 0.82						4.04	Mar.					A
Intersection Signal Delay:		~~~	.,=,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		ersection				**************************************			
Intersection, Capacity, Utili	zation 8	32.5%		1C	U Level	of Serv	ice E	المستوالة المستوالة				
Analysis Period (min) 15												

Splits and Phases: 10: 16 St. & Alton Rd

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ø1 **	<u>♣</u> ø4
9 s 79 s	42's
♦ ø6	★ ø8
88 (\$122.7)	4251468667538747536753

	۶	j	*	*		*	*	Ť	<i>p</i> = -	1	Ţ	1
Lane Group.	EBL	WEBIT		WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBI	SBR
Lane Configurations		43-			₩		ት	† \$		ኣ	ት ት	7
Ideal Flow (vphpl)	1900	1900	1900	1900		1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	16	12	10		12	10	12	12	10	12	10
Storage Length (ft)	0			. 0	7 .		120		· 0.	140		75
Storage Lanes	0	خلطا فنطب المناطقة	Ō	0		0	1		0	1	<u> Handara anno 1116</u>	1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	i-dealise de la constante	50	50		50	50	***************************************	50	50	50
Trailing Detector (ft)	Ō	0		0	0		0	0		Ö	The second section of the second	
Turning Speed (mph)	15	.,	9	15		9	- 15	*******************************	9	15		9
Lane Util. Factor	-1.00	1:00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.957			0.967	گارینی ا ^ی بطوا دستر شاه دیا کم د. *	95	0.992		de promision de la frança de la		0.850
Flt Protected		0:977			0.991		0.950			0.950		
Satd. Flow (prot)	0	1678	Ō	0	1720	0	1652	3511	. 0	1652	3274	1478
Flt Permitted		0.738			0.882		0.274		a di Risa	0.199		
Satd. Flow (perm)	0	1267	0	0	1530	0	476	3511	0	346	3274	1478
Right Turn on Red			Yes			Yes			Yes		2 V.U.	Yes
Satd. Flow (RTOR)		18	-dament lines - LL-st		13	And the second second		7	(*III		J-J-1 M	32
Headway Factor	1:09:	1:05	1.00	1.09	z 1:05	1:00	1.09	1.00	1.00%	.1.09		1.09
Link Speed (mph)	the administration and Million	30	***************************************	1011 Jan 1101 A 10 10 10 10 10 10 10 10 10 10 10 10 10	30	LLA KETI OFFI LEGALISTIC	CO-12 KIDT AUT LAWE.	30	the beautiful or and the same a	and an internal passed in the Popular	30	Proping and a second of
Link Distance (ft)	77 77 77 77	407			196			276			591	
Travel Time (s)	M-H-J	9.3	.h		4.5			6.3			13.4	
Volume (vph)	215	102	146	22	70	30	101	886	48	159	895	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		10			10	Dinkar	ALCONOMICS OF THE SECOND				1.0	
Adj. Flow (vph)	234	111	159	24	76	33	110	963	52	173	973	53
Lane Group Flow (vph)	**************************************	504	n (20	0.	133	0.1	-,110\	1015	÷ ;; • '0; •	173	∵ 973¥	53
Turn Type	Perm	•		Perm			Perm			pm+pt		Perm
Protected Phases		4			8		7.9	2	a Silingan Aldaria	1	6	
Permitted Phases	4			8			2			6		6
Detector Phases	1	46	zeto)	, ∦8	8	自由以	1, 2,	2		J. 16	∘¦6∥	6
Minimum Initial (s)	27.0	27.0		27.0	27:0		30.0	30.0		5.0	30.0	30.0
Minimum Split (s)	38.0	38.0		38.0	38.0		79.0	79.0	洲洲洲	- 8.0	79:0	79.0
Total Split (s)	42.0	42.0	0.0	42.0	42.0	0.0	79.0	79.0	0.0	9.0	88.0	88.0
Total Split (%)	32.3%		0:0%	32.3%	And the second second second	0.0% 6	30.8% ₋ 6		0.0%	6.9%	67.7% _:	
Maximum Green (s)	37.0	37.0		37.0	37.0		74.0	74.0	5-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	6.0	83.0	83.0
Yellow Time (s)	4.0	4.0		4.0	4.0	(D.164).	4.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		0.0	1.0	1.0
Lead/Lag							∴Lag	⊸Lag	PHARAT			
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	19 (44)			7 (P.Z.)	3.0	3.0			3.0	
Recall Mode	None	None		None	None		C-Max C			None (C-Max (
Walk Time (s)	7.0	7.0		7.0,	7.0	-	56.0	56.0	المائدة المائدة		56.0	56.0
Flash Dont Walk (s)	26.0	26.0		26.0	26.0		18.0	18.0			18.0	18.0
Pedestrian Calls (#/hr)	0.	₩0 ,		. 0	- 0	19 (1) (2) (1) (1)	. 0	0.			adm-	7.0
Act Effct Green (s)		38.0			38.0		75.0	75.0		84.0	84.0	84.0
Actuated g/C Ratio		-0.29					0.58	0.58	7.70	0.65	0.65	0.65
v/c Ratio		1.32			0.29		0.40	0.50		0.63	0.46	0.05
Uniform Delay, d1		43.8			31.9		15.1	16.2			11.6	3.3
Control Delay		195.8		•	34.1		20:6	17.3		21.3	12.4	4.3
	and the second	ggarand white cor		Epenorii eros		and the same of			Recover water that		فارحوج المستقد والتسمي	دووالمبسيروا

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	۶		~	*	4	1	*	†	1	1	1	4
Lane Group		EBI		WBL	Wei	Wer:	NBL:	NBT	NBR	SBL	SBT	SBR
Queue Delay		0:0			0.0		0.0	0.1		60.1	0.0	0.0
Total Delay	en a tentra del di pracerdo <u>al prese</u> B	195.8	tradicalenter, include increal		34.1	ة شعقه بسلب فحد الكرز و حدد.	20.6	17.3		21.4	12.4	4.3
LOS		J. F	Fig. Ct. b		· C		, C	- ' B -	350	C	В.	A
Approach Delay		195.8			34.1			17.7			13.4	
Approach LOS		TOPE		沙蒙的	: / G / :		Tree and the	₩B	24-94		∘ ∖B	क्षा क्षेत्रका इ.स.च्या
Intersection Summany				<i>iki</i> ji ji			2118					
Area Type: Ot	her					¥.						
Cycle Length: 130												
Actuated Cycle Length: 1												77 - KS
Offset: 51 (39%), Referen	nced to	phase 2	:NBTL	and 6:S	BTL, Sta	art of G	reen	er allektivsk rikkel, at 17 detseerne p				
Natural Cycle: 145						2005	識的多		17年的第	in the second	AT MAIN	张振
Control Type: Actuated-C			Press, James Serve					~; waters		-		E-19+10100001
Maximum v/c Ratio::1.32		ALT THE										<u> </u>
Intersection Signal Delay:		alanna sa shi baranna farann fari dan i barabbi da	and with the second second second		ersectio				(pter september 1977)	**************************************	*************	~
Intersection Capacity Utili	zation-9	92:9%		‴,∺IO	U Level	of Serv	/ice F∈					
Analysis Period (min) 15							•					

Splits and Phases: 10: 16 St. & Alton Rd

Ophis and Thases: To: To oi: a fillott to	
ø1 w2	♣ ø4
9's 79's	42s.
\$ ₩ ø6	80 4
88's 12 12 12 12 12 12 12 12 12 12 12 12 12	42.5 6 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6

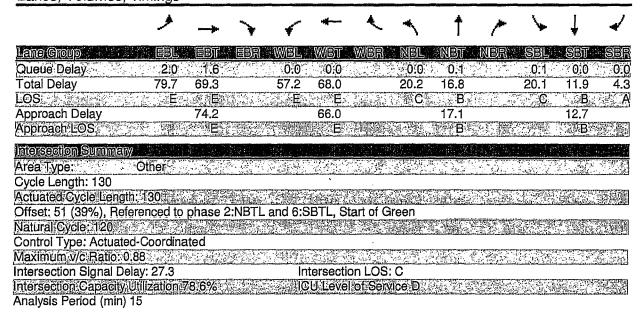
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	*	-	7	*		1	1	†	<i>*</i>	1	Ţ	1
Lane Group	EBL			WBL	WET	WBR	" NBL	NBT	NBR	SBL	Sei	- SBR
Lane Configurations	*	f)		*	ĵ.		ሻ	ት ጮ		*	十十	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	16	12	10	16	12	10	12	12	10	12	10
Storage Length (ft)	804	alsi je	5-640	110			120		(1.0	140		75
Storage Lanes	1		0	1		0	1		0	1		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	t processing agency to the control of the control o	50	50		50	50		50	50	50
Trailing Detector (ft)	Ō	0	· · · · · · · · · · · · · · · · · · ·	0	0		0	0		0	0	0
Turning Speed (mph)	15	#*.1 m	9	15		9	15	r Janes - regensummer	9	15	***********************	9
Lane Util. Factor 😓 💮	1,00	1.00	1.00	1.00	4.41a00	1.00	1.00	0.95	0.95	1.00	√ 0.95	marine metter illeri
Frt		0.912			0.955			0.992	ada karanda alam gerdan articeles di distri			0.850
FIt Protected	0.950			0.950			0.950			*0.950		
Satd. Flow (prot)	1652	1637	0	1652	1714	0	1652	3511	0	1652	3274	1478
Fit Permitted	0.950	1007		0.950			0.274			0.199	0074	4.770
Satd. Flow (perm)	1652	1637	0	1652	1714	0	476	3511	0	346	3274	1478
Right Turn on Red Satd. Flow (RTOR)	A	48	Yes	1917	13	Yes	رون الوقورات بي مست		Yes	بليها لماستطر والمتبدين	#623 #860	Yes
Headway Factor	1:09		1100°		1.05	- 1 00	1:09	/ ::1:00.	#.1.00	1.09		32 1.09
Link Speed (mph)	1:09	30	TENEDO P	- HanaE	્રાહ્યું કહ્યું 30	יייטיייייייייייייייייייייייייייייייייי	in lua	30	r i i uu	1.09	30	1.09
Link Distance (ft)		30 407			953			276		- W.	591	
Travel Time (s)		9.3	TV.A.		21.7	Alata and Alata		6.3			13.4	32
Volume (vph)	215		146	22	70	30	101	886	48	159	895	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)	HARA TENANGH	0.02 6.410m			10	41. VALUE		0.0 <u>2</u>	MEDIES -	U.U <u>L</u>	0.02 3.10	10.02 10.02
Adj. Flow (vph)	234	111	159	24	76	33	110	963	52	173	973	53
Lane Group Flow (vph)		270			109			1015		173	973	53
Turn Type	Split			Split			Perm		de la	pm+pt		Perm
Protected Phases	4	4	of the state of th	· .	8			2.		1	- 6	
Permitted Phases	د منظم المساور و المنظم المساور و المنظم المساور و المنظم المنظم المنظم المنظم المنظم المنظم المنظم المنظم الم	المتلفظ المناسبة والمتلفظ والمتلفظ المتلفظ الم	ikiine is institutionia die	ninin north districts	ناده سعطيفس ساعات	والبقب المستلف أكب مستنزمان	2		" مسئلت شاهده منظ المستوالية منظل المستوالية المستوالية المستوالية المستوالية المستوالية المستوالية المستوالية	6	والمستملة والمتحدث والمستمد	6
Detector Phases	in 4.	145		: ×8.	8 .		2	2	Time.		6	√.6
Minimum Initial (s)	5.0	5.0	A14 34 34 7 4 4 4 (8)	5.0	5.0	- SAME IN PROCEEDS	30.0	30.0	Marie Marie Marie	5.0	30.0	30.0
Minimum Split (s)	21,0	21.0		10.0	10.0		79.0	79:0		8.0	79.0	79.0
Total Split (s)	26.0	26.0	0.0	16.0	16.0	0.0	79.0	79.0	0.0	9.0	88.0	88.0
Total Split (%)	20.0% 2	20.0%	0.0%	2.3%	2.3%	0.0% (30.8% 6	30.8%	0.0%	6.9%	37.7% (37.7%
Maximum Green (s)	21.0	21.0		11.0	11.0		74.0	74.0		6.0	83.0	83.0
Yellow Time (s)	4:0	4.0	and the same	4.0	4.0	10,15,14	والمستقرقة فسيف والمستقر	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	h or entre or a trace	0.0	1.0	1.0
Lead/Lag							Lag					
Lead-Lag Optimize?	it signer in complete the strategy				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Yes	Yes		Yes		
Vehicle Extension (s)	3.0			3.0								3.0
Recall Mode		None		None	None ·		-Max C				C-Max C	
Walk Time (s)	5.0		Profile A			and the second	56.0	56.0				Angella Company
Flash Dont Walk (s)	11.0	11.0	and Carena				18.0	18.0	نۇد ئارىغاندانلىدان	34.11	18.0	18.0
Pedestrian Calls (#/hr)		A. The same of the					70.0			OF 0	0; o= 0;	10
Act Effct Green (s)	21.1	21.1		11.2	11.2	er er Endersten	76.3	76.3		85.6	85.6	85.6
Actuated g/C Ratio	0.16	0.16	ENERS!	0.09	0:09	已次对理的	0.59				0.66	0.66
v/c Ratio	0.87	0.88		0.17	0.68		0.39	0.49		0.61	0.45	0.05
Uniform Delay, d1	53.0 77.8	43.5		55.0 57.2	50.7 68.0		14.5 20.2	15.5 16.7		8.5 20.0	10.8 11.9	3.0
Control Delay	11.0	67.7		J1.2	00.U	agagaya sa ma ministri gan	۷۰.۷	10./		۷۷.۷	ט.וו	4.3

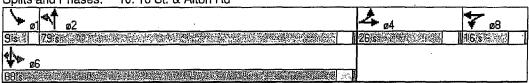
5/22/2008

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Splits and Phases: 10: 16 St. & Alton Rd



5/22/2008 NCL PBS&J Inc.

Lane Configurations A BI BBI BBI BBI BBI BBI BBI BBI BBI BBI SBL SBI		۶		*	*		*	1	†	1	-	ļ	4
Lane Configurations \$	Lama @nova	EBL		EBR	WeL	:WBT	WBR.	NBL.	NET	NBR	୍ଷମ	SET	- SER
Ideal Flow (vphpl) 1900 <td></td> <td>Maria de la Companya de la Companya</td> <td>A.</td> <td></td> <td></td> <td><u> </u></td> <td></td> <td>*</td> <td>*1.</td> <td></td> <td>*</td> <td>**</td> <td>*</td>		Maria de la Companya	A.			<u> </u>		*	* 1.		*	**	*
Lane Width (ft) 10 16 12 10 16 12 10 16 12 10 12 11 11 11 11 11 11 11 11 11 11 12		1900	1900	1900	1900	1900	1900			1900	1900		1900
Storage Length (ft) 0 0 0 120 0 140 75 Storage Lanes 0 0 0 0 1 0 1 1 Total Lost Time (s) 4.0													
Storage Lanes 0 0 0 0 1 0 1 1 Total Lost Time (s) 4.0 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>													
Total Lost Time (s) 4.0						***************************************		1			1		1
Leading Detector (ft) 50 <t< td=""><td></td><td>_</td><td>4.0</td><td>_</td><td>_</td><td>4.0</td><td>-</td><td>4.0</td><td>4.0</td><td>-</td><td>4.0</td><td>4.0</td><td>4.0</td></t<>		_	4.0	_	_	4.0	-	4.0	4.0	-	4.0	4.0	4.0
Trailing Detector (ft) 0 <t< td=""><td></td><td>an anni feith an an air inneach a</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>and the same of the same</td><td></td></t<>		an anni feith an an air inneach a										and the same of the same	
Turning Speed (mph) 15 9 15 9 15 9 15 9 Lane Util. Factor 1.00											The fact that the second services		
Lane Util Factor 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.95 0.95 1.00 0.95 1.00 0.95 1.00 0.850 Frt 0.957 0.967 0.992 0.850 Flt Protected 0.977 0.991 0.950 0.950 0.950				9			9			9		i arria di il	9
Frt 0.957 0.967 0.992 0.850 Flt Protected 0.977 0.991 0.950 0.950			1.00			1.00			0.95			0.95	
Flt Protected 0:977 0:950 0:950		ما المالية الم		dipaideciadeth.ibi6			Madigari Maries A.C	inimaliani minimalia		Alligh L.Appropries.		بمضي المناسبة المناسبة المناسبة	
				77 37	WY366			0.950	1102		0.950		
Salu. 11019 (DIOL) 0 1070 0 0 1720 0 1032 0011 0 1032 0274 1470	Satd. Flow (prot)	0	1678	0	0	1720	0	1652	3511	0	1652	3274	1478
Fit Permitted 0.977 0.991 0.274 0.199						0.991							78
Satd. Flow (perm) 0 1678 0 0 1720 0 476 3511 0 346 3274 1478		0		0	0	the transfer to the second	0		3511	mili-laire tarangian		3274	1478
Right Turn on Red Yes Yes Yes Yes				Yes		W. 198	Yes		11/20	Yes	9: 437	7.7544	
Satd. Flow (RTOR) 15 10 7 32		a	15	idelitaatiinin taadii läkelik	والتواصينسية مساليفون	10	Elizabilia de managania	منهن فالمالية المساور ومسودة	7	alimnastiimasites			Laborer W. der W. dertied
Headway Factor 1.09 1.05 1.00 1.09 1.05 1.09 1.05 1.09 1.09 1.09 1.09 1.09		1.09		-1.00	1.09		1.00	1:09#	1.00 ×	1:00	1.09		
Link Speed (mph) 30 30 30		أمشنيناء وسألمن للاالانالالالالالالالا	distriction of the second		\$ - 1000.00	and the second second second		det and a graph of the self of		- This printing - in will	ada ar west site	30	indianisianista.
Link Distance (ft) 407 953 276 591			407	77 19 18 18 18 18 18 18 18 18 18 18 18 18 18		953	10 10 10 10 10 10 10 10 10 10 10 10 10 1		276		FT SE	591	
Travel Time (s) 9.3 21.7 6.3 13.4		likel geneg inner e sandrije. J darovi	9.3	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	والمساوية	21.7	ALLEN ALLEN ALLEN	i t-m 4000 i i n	6.3	il -i-11-i-12ii-iiii		13.4	النشاد فيستميد
Volume (vph) 215 102 146 22 70 30 101 886 48 159 895 49	Volume (vph)	215	102	146	22	70	30	101	886	48	159	895	49
Peak Hour Factor 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr) 10 10 10	Parking (#/hr)		10			10		Hildren Spinster				10	
Adj. Flow (vph) 234 111 159 24 76 33 110 963 52 173 973 53		234	111	159	24	76	33	110			173	973	
Lane Group Flow ((vph)) 0 504 0 0 133 0 110 1015 0 173 973 53	Lane Group Flow (vph)	0	504		''∂'8	133	0	110	1015	0.7	173	973	- 53
Turn Type Split Split Perm pm+pt Perm	Turn Type	Split	ielo semel , d. siikan min daljiisees	meneng philips of a finishing or a	Split	·	Military Managarithma	Perm	A		om+pt		Perm
Protected Phases 4 4 8 8 2 1 6	Protected Phases	4 .	-4	4.19.20	8	8			2.5		1.	6	
Permitted Phases 2 6 6		ei, agent, a re'e Washier.		and the same of th						. V . influential territorial and live and	6	and the second s	6
Detector Phases 4 44 18 8 2 2 1 1 6 6	Detector Phases	4	:14		8.24	8		2	⊭ 2		1,0	6.	6
Minimum Initial (s) 5.0 5.0 5.0 5.0 30.0 30.0 5.0 30.0 30.0	Minimum Initial (s)	5.0											
Minimum Split (s) 21.0 21.0 10 10 10 10 10 10 10 79 10 79 10 8:0 79 10 79 10		21.0	21:0			10:0₩					8.0	79.0	79.0
Total Split (s) 26.0 26.0 0.0 16.0 16.0 0.0 79.0 79.0 0.0 9.0 88.0 88.0	Total Split (s)												
Total Split (%) 20.0% 20.0% 0.0% 12.3% 12.3% 0.0% 60.8% 60.8% 0.0% 6.9% 67.7% 67.7%		20.0% 2		0.0%	2.3%		0.0% 6	30.8% E	30.8%	0.0%	6.9%	37.7%	37.7%
Maximum Green (s) 21.0 21.0 11.0 11.0 74.0 74.0 6.0 83.0 83.0	Maximum Green (s)		21.0										83.0
Yellow Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 3.0 4.0 4.0	Yellow Time (s)	4.0			4:0	4.0		4.0	4:0%		3.0	4.0	4.0
All-Red Time (s) 1.0 1.0 1.0 1.0 1.0 0.0 1.0	All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0				
Lead/Lag Lag Lag Lead													
Lead-Lag Optimize? Yes Yes Yes													
Vehicle Extension (s) 3:0 3:0 3:0 3:0 3:0 3:0 3:0 3:0		3.0	3:0:5										
Recall Mode None None None None C-Max C-Max None C-Max C-Max					None	None	C				None C	C-Max C	C-Max
Walk Time (s) 5.0 5.0 56.0 56.0 56.0 56.0										17/144			56.0
Flash Dont Walk (s) 11.0 11.0 18.0 18.0 18.0 18.0													
Pedestrian Calls (#/nr): 0 0 0 0		. 0			174300	1,566		dimension and a linear factor				mint the same	
Act Effct Green (s) 22.0 11.7 75.0 75.0 84.2 84.2 84.2													
Actuated g/C Ratio 0:17 0.09 0!58 0:58 0:65 0:65 0.65				To the state of									
v/c Ratio 1.70 0.81 0.40 0.50 0.62 0.46 0.05				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						~~;;;;;;;			
Uniform Delay, d1 51.2 53.5 15.1 16.2 9.0 11.5 3.2					13.7						*** ***********		
Control Delay 362.5 84.5 20.6 17.3 20.9 12.4 4.3	Control Delay	. (362.5			84.5		20.6	17.3		20.9	12.4	4.3

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Miami Beach BODR_Revised With Existing Geometry and Split Phase 10: 16 St. & Alton Rd Lanes, Volumes, Timings 2007 PM

	≯		7	*		*	4	†	7	-	1	4
Lane Group'				WBL	Weit :	WBR	NBL	NBT	NBR.	SBL	Set	SER
Queue Delay		0:0		1777	0.0		0.0	0.1		0.1	ં0.0	0.0
Total Delay		362.5			84.5		20.6	17.3		21.0	12.4	4.3
LOS	Taksi Alia	. 46 F.			∴ ⊁ F		C	⊸ B		······C··	В	A
Approach Delay		362.5			84.5			17.7			13.2	
Approach LOS		**		ing property of the second	#FF			∵ B.		A. 10 P. 76	'	是大学
Intersection Summary 🖖			Mari I						285 122			
Area Type: Ot	her					246	-					
Cycle Length: 130												and the land
Actuated Cycle Length 1									47.44			
Offset: 51 (39%), Referen	ced to	phase 2	:NBTL	and 6:S	BTL, Sta	art of G	reen				io arminartation of the	
Natural Cycle: 150										TWS:		
Control Type: Actuated-C												
Maximum v/c Ratio: 1.70												
Intersection Signal Delay:		·····			ersectio							
Intersection Capacity Utili	zation	92.9%	400.	::-:IC	U Level	of Serv	ice F					i de la companya di santa di Contra di santa di s
Analysis Period (min) 15												

Splits and Phases: 10: 16 St. & Alton Rd

Ø1 ★↑ Ø2		♣ ø4 ·	‡ ø8
9.6 7.9.6		26 s	16's
♦ ø6			
18 (S) 18 (S	1		

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CITY OF MIAMI BEACH PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

Intersection: 16th ST & Alton Road 11/18/2008

mersection. I	6th ST & Alton Road	11/18/2008									
	Time	4:00-4:15 PM	4:15-4:30 PM	4:30-4:45 PM	4:45-5:00 PM	Total					
	Total Observed	44	26	28	26	124					
Mode	Bicycle										
	from 16 ST Left on to Alton Rd. South	4	0	2	8	14					
	from 16 ST Right on to Alton Rd. North	3	4	1	1	9					
	from 16 ST across Alton Rd. Westbound	2	2	4	2	10					
	from 16 ST Left on to Alton Rd. North	1	1	0	1	3					
	from 16 ST Right on to Alton Rd. South	1	0	0	1	2					
Discotts	from 16 ST across Alton Rd. Eastbound	6	5	5	4	20					
Direction	from Alton Rd Left on to 16 ST East	11	0	5	1	17					
	from Alton Rd Right on to 16 ST West	1	0	0	0	1					
	from Alton Rd across 16 ST Southbound	6	5	6	2	19					
	from Alton Rd Left on to 16 ST West	1	0	0	1	2					
	from Alton Rd Right on to 16 ST East	0	0	1	0	1					
	from Alton Rd across 16 ST Northbound	8	9	4	5	26					

Attachment 3

CITY OF MIAMI BEACH PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

Intersection: 16th ST & Alton Road

11/18/2008

	Time	5:00-5:15 PM	5:15-5:30 PM	5:30-5:45 PM	5:45-6:00 PM	Total
	Total Observed	21	19	20	12	72
Mode	Bicycle					
	from 16 ST Left on to Alton Rd. South	2	2	2	0	6
	from 16 ST Right on to Alton Rd. North	1	1	2	2	6
	from 16 ST across Alton Rd. Westbound	3	3	1	3	10
	from 16 ST Left on to Alton Rd. North	1	0	0	1	2
	from 16 ST Right on to Alton Rd. South	1	0	1	0	2
Direction	from 16 ST across Alton Rd. Eastbound	4	1	1	1	7
Direction	from Alton Rd Left on to 16 ST East	0	3	2	1	6
	from Alton Rd Right on to 16 ST West	0	2	1	0	3
	from Alton Rd across 16 ST Southbound	2	4	2	0	8
	from Alton Rd Left on to 16 ST West	3	0	1	1	5
	from Alton Rd Right on to 16 ST East	1	1	1	0	3
	from Alton Rd across 16 ST Northbound	3	2	6	3	14

